** NEXT MEETING **

SATURDAY, August 20th — Open at 2PM

ARMBRUSTER SCHOOL — GREENDALE

ATARI® 600XL™

An ideal introduction to computers, the ATARI 600XL Home Computer features built-in ATARI BASIC Programming Language, a full-stroke keyboard, a HELP key, and an international character set. The ATARI 600XL Home Computer provides access to hundreds of ATARI software programs and a growing family of ATARI hardware products. To insure years of continued enjoyment and expandability, the ATARI 600XL Home Computer includes an external processor bus connection for adding up to 64K memory (ATARI Memory Module™ available later this year), and for accessing sophisticated

o   MEMORY: 16K RAM (expandable to 64K with optional expansion Memory Module). 24K ROM (operating system plus ATARI BASIC programming language)

o   KEYBOARD: Full-stroke design. 62 keys, including HELP key and 4 special function keys. International character set. 29 graphics keys.

o   CPU: 6502C microprocessor. Clock speed of 1.79 MHz

o   SPECIAL ATARI INTEGRATED CIRCUITS: GTIA (graphic display). POKEY (sound generator and controller ports). ANTIC (controls screen and input/output).

o   PROGRAMMING FEATURES: Built-in ATARI BASIC programming language. HELP key (provides additional information and menu screens). Software compatibilty (works with programs designed for all ATARI Home Computers).

o   DISPLAY: 11 graphics modes. 256 colors (128 colors displayable at one time). Maximum 320 x 192 resolution in graphics modes. 5 text modes. Maximum text display is 40 columns x 24 lines.

o   SOUND: 4 independent sound voices. 3 1/2 octive range.

o   INPUT/OUTPUT: Software cartridge slot. Expansion connection (external processor bus for memory expansion and adding future peripherals). TV output. 2 controller ports. Serial I/O connector.

MILATARI * * * AUGUST 1983

Milwaukee Area ATARI Users Group

This newsletter is written and printed by members of the Milwaukee Area ATARI Users Group (MILATARI), an association of individuals with a common interest in using and programming ATARI computers. MILATARI is not affiliated with the ATARI company, nor any other commercial organizations.

All articles are written and donated by the membership. Opinions expressed in this publication are those of the individual author and do not necessarily represent, nor reflect, the opinions of MILATARI nor those of any other commercial or non-commercial organizations. Any article appearing in this newsletter may be reproducted, providing credit is given to the author and to MILATARI.

Write MILATARI Newsletter at P.O. Box 1191, Waukesha, WI 53187.

MEMBERSHIP INFORMATION

Membership is open to individuals and families who are interested in using and programming ATARI computers. The membership includes the subscription to this newsletter and access to the user's library. The membership fee is $15 per year for individual, $20 for family and $10 for associate. Contact Larry Leskovsek, Treas. at 547-0249 or write MILATARI, P.O. Box 1191, Waukesha, WI 53187 for more information.

MEETING INFORMATION

MILATARI meetings are held once monthly. This month the meeting will be held at the Armbruster School, 7000 Greenway, Greendale, WI. The meeting is held in the multi-purpose room. BASIC classes begin at 2:00 P.M. Technical sessions are also held a 2:00 P.M. The business session begins at 3:00 P.M. followed by demostrations. The library will be open before and after the business meeting.

MILATARI Officers:

President	Gary Nolan 353-9716
Vice-president	Chris Stieber 529-2663
Treasurer	Larry Leskovsek 547-0249
Secretary	Jim Comaris 353-3447
Eduction Chairperson	Linda Scott 466-2314
Cassette Librarian	Ron Friedel 354-1717
Membership Committee	Dennis J. Bogie 968-9341
	Sharon Gamache 421-2887
Disk Librarian	Steve Booth 367-8739
Publications Librarian	Karl Buschhaus 774-2576
Newsletter Editor	David Frazer 542-7242
Bulletin Board SYSOP	Bill Simotti 352-1790

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Technical support Group:

The following members have indicated a willingness to assist MILATARI members.

William Lawrence	1-968-3082	Programming
Don Wilcox	228-1650	Programming
Erik Hanson	252-3146	Prog/Tech
Gary Nolan	353-9716	Prog/Tech
Steve Booth	367-8739	Programming
Nick Liberski	782-5594	Prog/Tech

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MILATARI Bullentin Board:

The MILATARI Users Group maintains a 24 hr bulletin board service. The phone number is 352-2772.

PRESIDENT'S RAM
by Gray Nolan

HOW HOT WAS IT?

Congratulations to the survivors of the July meeting. With no A/C or fans last months meeting was a sauna. Our thanks to those of you who showed up. Our thanks also to Steve Hanson of the soon to be extinct Magic Lantern store of Madison. Steve brought a lot of his remaining software along to sell at some very good prices. For those of you who are asking, Steve who? He was one of the first people in the state to support the ATARI computers. Not only were his prices among the lowest but he was one of the first to do repairs. It's a shame that something less than a national chain store can't afford to handle home computers anymore. This is not just a problem for Atari, but Commodore and TI too!

PSSST!! WANT A HOT TIP?

Got a few extra bucks around with nothing to spend it on? Got faith that Atari can turn thier sales picture around? Then here's what you do, take that money and buy Warner Comm. stock. It hit a low of 23 1/2 the other day. It had been as high as 58 this year, and had been in the 60's at one time. Wall St. analysts say the price will go lower when Atari has to delay the delivery of thier new computers. The delay is caused by an industry wide shortage of chips. That combined with an expected 2nd quarter loss of between 40 to 60 million dollars, with some people predicting it to be as high as $120 million, should send the stock price down.

STAR WARS--COMPUTER (SALES) STYLE

First it was Bill Cosby for TI. Then came William Shatner for Commodore. Or, was it the other way around? Apple got Dick Cavett and IBM started using a Charlie Chaplin look-alike for its ads. Well hold on, because it looks like the year of the celebrity is upon us. Not only do we have Sarah Purcell touting the Tomy Tutor and Alan Alda advising us on the Atari's, but now even bigger fish have been landed. (Bigger than AA?(YES!)) SpectraVideo has announced that James Bond, yes James Bond, wellll, ok then Roger Moore, has been signed as thier spokesman. But the biggest news since John Wayne signed to do the aspirin commercial has hit the streets. Zenith Data Systems (aka Heathkit) has announced the signing of ZIGGY as spokesthing. YES! THE ZIGGY, of newspaper fame has been signed to a long term contract. Rumor has it that Charlie Brown and Snoopy have been signed by IBM for its new home computer the "Peanut". What with Micky, Donald and Goofy pushing software for Disney, who could the next celeb hawker be?

AND THE WINNER IS????

To the member who comes up with the best famous person and computer equipment combination goes the disk (or two cassettes) of thier choice from the library. And, NO!, the Marque de Sade and the Atari 810 (or 410) is not allowed. The last two have been discontinued anyway. Deadline is the Sept. meeting.

SCHOOL DAZE

The next round of Basic classes will start in September. Cost for the 4 month, 8 class, course is $20 per member. Classes will be held on the Saturday of the meeting and on one weeknight between meetings. All classes will be held at Ambruster school. For more information come to the August meeting or call Ed. officer Linda Scott at 466-2314.

WHAT ARE YOU KIDS DOING OVER THERE?

For those young people who attend the meetings with thier parents and get restless during the bussiness meeting, we will be starting a Kids Korner. It'll be set up in one of the classrooms and there they can play games, do some programming or run any programs they want. This will only work with your help. We'll need systems for them to work with along with someone to supervise. How about some of the older kids? For more info or to commit a system or programs call Chris Stieber at 529-2663.

HOW COME THIS PLUG DON'T FIT???

For the bigger kids (you and me?) we will be running an ATARI Workshop come the August meeting. It will run 4/5 months and is intended to help you newcomers to obtain a better understanding of your computer. The subjects covered will be equipment related not programming. Some of the subjects we'll touch on will be system configurations, uses and types of peripherals (disk drives, printers, modems, ect.) and application type programs (word processors, data bases, spread sheets, ect.). So if you're new to computers or want to learn more about yours come to the August meeting for the workshop. Starting time is 2pm.

SUCH A DEAL I'VE GOT FOR YOU!!

In the last couple of weeks I've recieved a ton of mail. Some good, some eh!! (Hands out in front of you, spread your fingers, rotate wrists back and forth) Here's the lot of it.

From Talmis/Infoworld comes a notice of The Great American Software Contest with a grand prize of $10,000 and category prizes ranging from $3,00 to $250. The contest is held in conjuntion with a software seminar to be held in Boston, Nov. 1-2. For more info you can write or call;

Master Plans Conference Management
111 E. Chestnut St.
Chicago, IL 60611
(312) 944-1171

Or see the ad on page 373 in the August issue of BYTE magazine.

Peripherals, Ect. is the name of yet another new computer related magazine. Calling itself the #1 guide to expanding your micro is pretty ambitious, but time will tell. The first issue is devoted to disk drive systems. Two issues were sent for the library. Special subscription rate cards are also available. Normal yearly rates $35 now $11.95. They are also looking for authors for articles and will pay $75 per page. for more info call (800) 854-2783.

The Programmer's Institute is running The First Hackers Open. First prize is $1000 + royalties, 2nd prize is $500 + royalties. So if you have a program you've written that you think is commercial quality, this is your chance to make some money with it. Deadline is Oct. 31,'83. For more info call 1-800-334-7638 or see page 129 of the August issue of COMPUTE, OR see me at the next meeting.

AXLON is having a sale on its memory boards. 32K is $47, 48K is $89 and 128K is $299. There will be order forms at the meeting. Or call (408) 945-0500 to order.

For $260 you can attend all three days of Online '83 in Chicago. Only $150 for a single day. This years "Conference For Information Professionals" will be held Oct. 10-12. The focus of this years show will be uses of microcomputers.

If you use your micro for serious business this could be for you. See me. you know where, for more info.

Would you like to have the convenience of single stroke cursor control? How much are you willing to pay for it? Well from Wisner Electronics comes a four key pad to allow you to move the cursor around the screen. Normal cost is $35 + $2 ship/hand. But for a limited time, with orders of five or more, the price is $30 shipping included. The order has to come from the group to get this price. And if you and four others bring thier money to the August meeting we'll place the order.

HEY THAT'S NOT FAIR! IS IT?

Through the grape vine comes this little tidbit for you Miner 2049'er fans. You say you can't get past level five and would like to try #10, just once? Well here's your chance. The following procedure will allow you to start at any point you want. Get your man to the ramp on level one. Press Control+1. Then type in the following numbers, 2137826861. Now press Shift and the number of the level you want to start at. Shift-4 starts at 4, Shift 8 starts at 8, ect., ect.. Try it a couple of times. Then if you feel guilty about taking a shortcut just destroy this newsletter and go back to doing it the hard way. Oh yes! We'll be selling extra copies of this article at the next meeting.

LEGAL EAGLES IN THE BIG CITY

From Chicago comes word that a 15 year old has agreed to help Atari with a piracy crack-down. The youth will reportedly supply authorities with the names of his sources and those he supplied pirated software to. It's said that he and some friends used a Happy Drive to do the copying. Rumor has it that Atari is really after some others and is using him to get them.

WATCH OUT YOU DON'T STEP ON 'EM

It's for the 2600 VCS but still interesting. A new game called AndroMan featuring a 12 inch high minibot which is controlled by a joystick via a remote infrared signal. Also included is a game cartridge, transmitter, game playfield and coded game pieces. No prices as yet. And if the name sounds familiar it should. It comes from Androbot a Nolan Bushnell company.

SHAKE-RATTLE AND ROLL

As predicted by scores of people there is a big shake-up at ATARI. A lot of heads are and will roll, including that of Raymond Kasser chief exec. and chairman of the board. His replacement will be James Morgan former VP of marketing at Philip Morris. Maybe it'll be Atari-time with a caffine free, low tar computer (sometimes I hate myself). P-M owns both Miller beer and 7UP. Mr. Morgan will be paid $10 million over the life of his contract. I wonder how long contracts usually live in captivity.

FILL'ER UP PLEASE

The newest idea to hit the software market looks like a winner. Re-fillable cartridges. OK, re-programable. You go to the software place, buy a cart., use it for as long as you want. When you want something else you take it back and the man erases the chips and re-programs it with the software of your choice. Sounds good, but don't rush out to the store yet. It's a good six months or more away. The best part of this is that it should reduce the cost of software. Prices I've heard mentioned run around $15/25 for the first cart. and $10 for re-fills.

BACK AND FORTH

Atari started shipping the new 1050 Dual density disk drives recently. An everybody started shipping them back. It seems that they don't work. N kidding. One mail order house had 200 units on order and everyone of them had to be returned. Lets hope that this is NOT a preview of things to come.

HOW LOW CAN IT GO???

The price of the 800's and 400's continues to drop. Target closed out thier stock by selling the 800 for $299 and the 400 for $99, both before rebate. One discount store in California was selling the 400 for $69.97 BEFORE rebate. Figure it out.

THE END

Until the 20th, BYE..........

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SLAM THE HOOD AND SWEAR A LOT
(It always worked for the FORD)
by Gary Nolan

This a review of the Austin Franklin 80 column color board for the Atari 800. It will be short and to the point.
STAY AWAY FROM IT!!!
It does not work. Not as originally described at least. Four people with 800 computers tried it out and had very disappointing results. We tried it with both "A" and "B" operating systems, but not with an RGB monitor as that requires a special cable that is not supplied with the board. If you have very good TV or a monitor you'll have no trouble reading the 80 col. display. Otherwise it's eyestrain time.
This really should be called an 80 col. system as it comes in two parts. Board #1 is the video output board and fits into slot three so you'll need a 32K or 48K board. The second part is a cartridge that goes into the right hand slot and gives you 80 col. capability and is used only when you want that feature.
It does not work with ANY software as originaly advertised. The only software I got it to work with was T.H.E.. It did do program listings but I would NOT pay $250 for that. There is also a problem with hitting System Reset. With some software is causes system lock-up.
This product has a good base to build from, but it needs more work to make it acceptable. So if you need 80 columns on the screen get the BIT3 or wait for the improved version of this OR wait for ATARI's CPM module later this year. But I can't recomend this product at this time.

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Low-cost Modem with Printer port

A low-cost modem has just been announced by the Micro-peripheral Corp.

The unit, called AutoPrint Microconnection, retails for $149.95. The unit features both auto-dial and auto-answer ability and has a built-in Centronics compatible, parallel printer port. It will plug directly in t the ATARI without an 850 interface. Deliveries begin in September.

DISK NEWS
by Steve Booth

At least Two New Disks will be issued this month. Both will contain documentation for all the programs. It is my hope to continue this practice. To find out what information is available, insert the Disk (with the BASIC cartridge in the computer) and RUN "D:INFO". The INFO program will List out the documentation that is currently available for each file. The program will give you the option of either listing the information to the Screen or to your printer.

Disk 023 will be a Games Disk containing the following programs:

1. Snack Time by an unknown author.
2. TBALL written by Tom Lyskawa. A Machine Language Pinball game that can be played using either Paddles or Joysticks! Since the program is in Machine Language, it is really fast!!
3. RATTLERS written by Tom Lyskawa. A Machine Language Pinball game that can be played using either Paddles or Joysticks! Since this program is also in Machine Language, it is also fun to play.
4. The Live Wire program from ANALOG 12. This machine language program is very similar to the Arcade game, TEMPEST. It is probably one of the best Arcade-Type games in the public domain.
5. The INFO program that prints out documentation on all of the above programs.

Disk 024 will be a Utilities Disk containing the following Programs:

1. Home Inventory Version 2 - a greatly improved version hat allows saving data to disk files, changing titles of the entry fields and the Printing out of the data. The program is still unbelievably fast!
2. Two Disk Speed Checkers including the Famous SNAIL program that was in ANALOG 12.
3. The Home Budget Program that was in ANALOG 12.
4. The Sound Effector Program that was in ANALOG 12.
5. The FORTHDOS program that was in ANALOG 9.
6. A Program that allows you to PEEK around in RAM Memory.
7. A Program that allows you to use part of your RAM memory as a Disk Drive (or a holding area for other programs).
8. A conversion program to allow you to convert Hexadecimal numbers.
9. And More ???
10. The Now Famous INFO program that prints documentation on all of the above programs!

FOR SALE: Home Calc - an easy to use "Electronic Spreadsheet. Cassette version $25, Diskette version $35. Call Dave Frazer - 542-7242.

REVIEW OF SYNASSEMBLER
by Steve Booth

I have read reviews of Synapse Software's Syn Assembler in both THE BOOK OF ATARI SOFTWARE and ANTIC. Both reviews were very good about pointing out the features of the product. Neither pointed out the deficiencies. This review will attempt to rectify that situation. The Syn Assembler product is:

1. A "Single-Load" Assembler/Editor/Monitor Program.
2. A Very Fast Assembler.
3. A Assembler which uses MOST of the standard 6502 mnemonics (such as LDX, ROL, etc). All the 6502 instruction set is supported, but there ARE slight differences between the Editor Cartridge and the Macro-Assembler Program.
4. A very powerful monitor which is very nicely incorporated into the SynAssembler system.
5. Overall, the Editor (program that allows you to create Assembler files) that comes with the SynAssembler is very good, it does have some "quirks".
6. There are some very good Appendicies in the documentation.

The following are reasons why I do NOT like the program:

1. The documentation was poor throughout the manual, especially in the area of using the Debugger. (I guess there's always the wish for one more example to make everything clear).
2. As far as I know, there is no way to assemble the binaries ONLY to the disk. This can be a very big problem when trying to type in large assembly language programs like FILL 'ER UP.
3. I had a great deal of problems trying to run the binaries separately. This turned out to be an insufficient knowledge of binary file structures. (There is no Error information or reference to places to look).
4. The NEW Command deleted the "Hidden" file (Not documented).
5. The OUT Command pays no attention to the VTOC of a disk and consequently renders a disk worthless if the specified device is a disk file (NOT DOCUMENTED).
6. The COPY and MOVE commands are in an awkward format.
7. The REPlace String command will replace only one occurance or all occurances of a string -- nothing in between.
8. Despite numerous long distance phone calls (which I paid for), the amount of support that Synapse gave me was negligible. (They offered me my money back after I complained to ANTIC magazine). I took their "kind" offer.

These are the kind of problems that I encountered while trying to use the Syn Assembler for about three weeks. Perhaps if I had persevered I might have found ways around these (and other) problems, but I was just too tired of fighting a product that has a basic problem of documentation.

ATARI COLOR GRAPHICS

Examples and discussions of the use of Color Graphics
on the ATARI 400/800 Home Computer System

Items 1 thru 3 were printed in the July issue.
1) Four-color Modes
2) Five-color Text Modes
3) Screenful of Hearts

Items 4 thru 10 are in this issue:
4) Etch-a-Sketch
5) Circlez
6) Fill a Shape
7) GTIA Graphics Modes
8) Swirl
9) Race
10) Bumper

Information provided by:

ATARI INC.
CONSUMER PRODUCT SERVICE
PRODUCT SUPPORT GROUP

DEMOPAC #4

```
1 REM ***** ETCH-A-SKETCH *****
2 REM ***** PY/JB 2/82    *****
3 REM draw lines on the screen, using the joystick
4 REM *****************************************
10 DIM XSTEP(20),YSTEP(20):REM arrays to hold x and y increments
20 COLOR 1:SETCOLOR 0,2,8:REM set up color info
30 GRAPHICS 6+16:REM set up whole screen in four-color high-res mode
40 REM initialize variables
50 X=80:Y=40
60 XSTEP(5)=1:YSTEP(5)=1:REM move southeast
61 XSTEP(6)=1:YSTEP(6)=-1:REM move northeast
62 XSTEP(7)=1:YSTEP(7)=0:REM move east
63 XSTEP(9)=-1:YSTEP(9)=1:REM move southwest
64 XSTEP(10)=-1:YSTEP(10)=P1:REM move northwest
65 XSTEP(11)=-1:YSTEP(11)=0:REM move west
66 XSTEP(13)=0:YSTEP(13)=1:REM move south
67 XSTEP(14)=0:YSTEP(14)=-1:REM move north
68 XSTEP(15)=0:YSTEP(15)=0:REM don't move
69 REM *****************************************
100 SOUND 0,0,0,0:REM turn off sound
110 IF STRIG(0)=0 THEN GRAPHICS 7+16:REM on trigger, clear screen
120 S=STICK(0):REM check joystick
130 X=X+XSTEP(S):Y=Y+YSTEP(S):REM increment position
140 TRAP 200:REM trap out-of-bounds error
150 PLOT X,Y:REM plot a point at the vew postion
160 GOTO 110:REM go check stick again
```

```
170 REM *********************************************
190 REM if out-of-bounds, do error routine
200 X=X-XSTEP(S):Y=Y-YSTEP(S):REM go back to last p9osition
210 REM sound warning beep
220 FOR VOLUME=15 TO 0 STEP -1
230 SOUND 0,136,10,VOLUME
240 FOR DELAY=1 TO 10:NEXT DELAY
250 NEXT VOLUME
260 GOTO 100:REM try again
```

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GTIA GRAPHIC MODES
Using Modes 9, 10 and 11
JB 5/82

The new GTIA chip allows three extra graphic modes, 9, 10 and 11. Modes 9 and 11 are complimentary; they work the same way, except that mode 9 has one hue and sixteen luminences, while mode 11 has one luminence and sixteen hues. Mode 10 combines the player and playfield color registers, so that nine registers are available at once.

In mode 9, the single hue is set in the background register, with the statement SETCOLOR 4,hue,0. In mode 11, the single luminence goes in register 4: SETCOLOR 4,0,luminence. In both modes, the COLOR statement selects one of the 16 variations of luminence (mode 9) or hue (mode 11). The STAR11 and STAR9 programs which follow demonstrate the technique.

Mode 10 combines all the player and playfield color registers, so that nine registers (1 background, & foreground) can be used at once. Since player registers cannot be set by SETCOLOR commands, it is best to set all nine registers with POKE commands. The locations are 704-712 (decimal). 704 controls the background color. You can then select a register with the COLOR statement, 0-8.

The resolution in all three modes is the same, 80 by 192. Each pixel is one scan line high and four color clocks wide. In contrast, a mode & pixel is one scan line high and half a color clock wide. A picture drawn in a GTIA mode looks similar to one drawn in mode 7, although the individual pixels are a different shape.

Mode 9 is appropriate for the simulation of depth and 3-D effects, since the many luminences allow fine shading gradations. Mode 10 can be used to provide an illusion of motion, by cycling colors through the registers, as shown in the following demo program. Mode 11 allows more colors to be displayed at once than any other mode, without resorting to machine-language programming. For a thorough discussion of how these modes are selected by ANTIC, refer to APPENDIX E of De Re ATARI, available from the ATARI Program Exchange.1 REM FILL IN A SHAPE

```
1 REM GTIA MODE 10
2 REM JB 5/82
3 REM Mode 10 has 9 color registers available.  This program shows
4 REM how to simulate motion by cycling colors through the registers.
5 REM *********************************************************************
10 GRAPHICS 10
15 REM Hues are assigned by poking into the registers.  704 is background.
16 REM Here, each color is +16, to get the next hue with the same luminence
20 POKE 704,0:POKE 705,30:POKE 706,46:POKE 707,62:POKE 708,78
30 POKE 709,94:POKE 710,110:POKE 711,126:POKE 712,142
35 REM *********************************************************************
40 COLOR 1:REM select a register with the color statement, 0-8
50 FOR X=0 TO 9:PLOT X,0:DRAWTO X,190:NEXT X
60 COLOR 2:REM select the next register
70 FOR X=10 TO 19:PLOT X,0:DRAWTO X,190:NEXT X
80 COLOR 3
90 FOR X=20 TO 29:PLOT X,0:DRAWTO X,190:NEXT X
100 COLOR 4
110 FOR X=30 TO 39:PLOT X,0:DRAWTO X,190:NEXT X
120 COLOR 5
130 FOR X=40 TO 49:PLOT X,0:DRAWTO X,190:NEXT X
140 COLOR 6
150 FOR X=50 TO 59:PLOT X,0:DRAWTO X,190:NEXT X
160 COLOR 7
170 FOR X=60 TO 69:PLOT X,0:DRAWTO X,190:NEXT X
180 COLOR 8
190 FOR X=70 TO 79:PLOT X,0:DRAWTO X,190:NEXT X
195 REM *********************************************************************
199 REM Cycle colors through registers-poke each with peek of next one.
200 N=PEEK(705)
210 FOR I=705 TO 711
220 POKE I,PEEK(I+1)
230 NEXT I
240 POKE 712,N
250 GOTO 200:REM keep cycling
```

```
1 REM SWIRL
2 REM WBB/DBM  4/82
3 REM A demonstration of the graphics modes and their capabilities
10 GRAPHICS 2+16:REM No text window
20 POSITION 3,5:PRINT #6;"CHOOSE A MODE"
30 PRINT #6;"HOLD start TO RESET"
48 REM *********************************************************************
49 REM Read the keyboard
50 OPEN #1,4,0,"K:":REM Open the keyboard as a device
60 GET #1,X:REM Returns ATASCII code for the key pressed
70 CLOSE #1
80 MODE=X-48:IF MODE<3 OR MODE>8 THEN 50:REM Convert ATASCII code to mode
number
90 RESTORE 400+MODE:REM Read only data for chosen graphics mode
```

```
2 REM LW/DBM 5/82
3 REM This program demonstrates the use of a BASIC algorithm
4 REM to do color filling of an arbitrary shape
5 REM ****************************************************************************
8 REM draw shape
9 REM
10 GRAPHICS 7+16:REM .                  full screen graphics mode
20 COLOR 1:DEG :REM .                   select color register, compute in degrees
30 GOSUB 500:REM .                      call math routine
40 PLOT X,Y:REM .                       draw initial point in shape
50 FOR T=0 TO 360:REM .                 number of points in shape
60 GOSUB 500:REM .                      call math routine
70 PLOT X,Y:REM .                       draw shape
80 NEXT T
90 REM ****************************************************************************
98 REM shape drawn, now fill it in with color
99 REM
100 X=79:Y=47:REM .                     starting point for fill routine
110 FILL=1000:TRAP 2000:REM .           fill routine is at line 1000
200 GOSUB FILL
300 GOTO 300:REM .                      loop to keep image on screen
400 REM ****************************************************************************
498 REM math routine computes next point along curve
499 REM
500 Y=30*COS(T)+47+10*COS(T*2)
510 X=30*SIN(T)+79+10*SIN(T*3)
520 RETURN
900 REM ****************************************************************************
998 REM fill routine
999 REM
1000 PLOT X,Y:REM .                 plot a point
1010 X=X-1:LOCATE X,Y,Z:REM .       check if next point is blank (color 0)
1020 IF Z=0 THEN GOSUB FILL:REM .if so, plot another point
1030 X=X+1
1040 Y=Y-1:LOCATE X,Y,Z:REM .       check in all directions
1050 IF Z=0 THEN GOSUB FILL
1060 Y=Y+1
1070 X=X+1:LOCATE X,Y,Z
1080 IF Z=0 THEN GOSUB FILL
1090 X=X-1
1100 Y=Y+1:LOCATE X,Y,Z
1110 IF Z=0 THEN GOSUB FILL
1120 Y=Y-1
1130 RETURN
1990 REM ****************************************************************************
1997 REM error routine: locations 186 and 187 hold a pointer to
1998 REM the line number at which STOP or TRAP occurred.
1999 REM
2000 TRAP 2000:GOTO PEEK(186)+PEEK(187)*256+20
2001 REM .                          go back to error line+20
```

```
110 IF PEEK(53279)<>6 THEN 110:REM Wait until START key pressed
120 POSITION 0,8:PRINT #6;"AND THEY'RE OFF..."
130 FOR WAIT=1 TO 250:NEXT WAIT:REM Delay loop
140 GRAPHICS 3+16:REM Full-screen graphics mode
150 DIM RACER(40):FOR I=0 TO 40:RACER(I)=0:NEXT I:REM Initialize
160 POKE 708,52:POKE 709,206:REM Set colors for racers
198 REM **********************************************************************
199 REM Advance a racer
200 TRACK=INT(RND(0)*X)+1:REM Pick a random track
205 POS=TRACK*2:REM Racer position
210 COL=TRACK:IF COL>3 THEN COL=COL-3:IF COL>3 THEN COL=COL-3:REM Set color
215 COLOR COL:REM Select color register
220 RACER(POS)=RACER(POS)+1:REM Increment the chosen racer's position
230 PLOT RACER(POS),POS:REM Plot the new position
240 SOUND COL,40-RACER(POS),6,10:REM Set sound according to racer number
250 IF RACER(POS)<39 THEN 200:REM If no winner, advance another racer
258 REM **********************************************************************
259 REM We have a winner!
260 FOR WAIT=1 TO 500:NEXT WAIT:REM Delay loop
270 GRAPHICS 2+16:REM Full screen graphics
280 POSITION 0,5:PRINT #6;"AND THE WINNER IS #";TRACK
290 FOR VOICE=0 TO 3:SOUND VOICE,0,0,0:NEXT VOICE:REM Turn off sound
300 FOR WAIT=1 TO 1000:NEXT WAIT
310 CLR :REM Clear all variables
320 GOTO 10
```

— — — — — — — — — — — — — — — —

```
1 REM BUMPER
2 REM WBB/DBM 4/82
3 REM A demonstration of image positioning and movement in a game format.
4 REM This game is played using joysticks in the #1 and #2 ports.
7 REM **********************************************************************
10 GRAPHICS 2+16:POKE 752,1:REM Set full-screen text mode and eliminate
cursor
20 DIM X(2),Y(2),D(2),BEGIN(1)
30 POSITION 4,3:PRINT #6;"PRESS start         TO PLAY"
40 POSITION 6,7:PRINT #6;"bumper!"
50 IF PEEK(53279)<>6 AND STRIG(0)<>0 AND STRIG(1)<>0 THEN 50:REM Check for
START key or triggers pressed.
55 X(0)=2:Y(0)=2:X(1)=35:Y(1)=20:Z=0:REM Initialize
70 FOR PLRNO=0 TO 1:D(PLRNO)=0:BEGIN(PLRNO)=1:NEXT PLRNO
80 GRAPHICS 3+16:REM Set full-screen map mode
85 PLOT X(0),Y(0):PLOT X(1),Y(1):REM Starting positions
98 REM **********************************************************************
99 REM This section checks the sticks
100 FOR PLRNO=0 TO 1:REM Player number 0 or 1
110 IF STICK(PLRNO)=15 THEN NEXT PLRNO
120 IF STICK(PLRNO)=15 THEN 100
```

```
100 READ HORIZ,VERT:REM Read data as x and y coordinates
110 GRAPHICS MODE+16:REM Full-screen graphics
198 REM *************************************************************************
199 REM Create swirling effect
200 COLOR 1:REM Select color register
210 POKE 708,RND(0)*256:REM Put random color into register
215 GOSUB 300:REM Call drawing routine
220 IF PEEK(53279)<>7 THEN RUN :REM If START key pressed, start over
225 COLOR 2:REM Select new register
230 POKE 709,RND(0)*256:REM Put random color into register
235 GOSUB 300:REM Call drawing routine
240 IF PEEK(53279)<>7 THEN RUN :REM Check for START key
250 POKE 77,0:REM Disable the attract mode
260 GOTO 200:REM Start over
298 REM *************************************************************************
299 REM This subroutine draws the design
300 FOR I=VERT TO 0 STEP -1
310 J=VERT-I:REM J goes down as I goes up
320 PLOT 0,I
330 DRAWTO HORIZ,J:REM Draw the line
340 NEXT I
360 FOR I=0 TO HORIZ
370 J=HORIZ-I:REM J goes left as I goes right
380 PLOT I,0
390 DRAWTO J,VERT:REM Draw the line
395 NEXT I:RETURN
399 REM *************************************************************************
400 REM The data statements define the screen size for each graphics mode
403 DATA 39,23
404 DATA 79,47
405 DATA 79,47
406 DATA 159,95
407 DATA 159,95
408 DATA 319,191
```

- - - - - - - - - - - - - - - - - -

```
1 REM RACE
2 REM WBB/DBM 5/82
3 REM This program demonstrates the use of ATARI graphics
4 REM and sound in a game format.
8 REM *************************************************************************
9 REM How many racers?
10 GRAPHICS 2+16:REM Full screen graphics
20 POSITION 0,5:PRINT #6;"SELECT # OF PLAYERS"
30 OPEN #1,4,0,"K:":REM Open the keyboard
40 GET #1,X:REM This returns ATASCII code of key pressed
50 X=X-48:REM Convert keycode to a number
60 IF X<1 OR X>9 THEN 40:REM Allow only 1 through 9
70 CLOSE #1
100 GRAPHICS 2+16:POSITION 0,4:PRINT #6;"PAY YOUR DUES"
105 POSITION 0,6:PRINT #6;"start TO CONTINUE"
```

DEMOPAC 4 (con't)

```
128 REM **********************************************************************
129 REM This section changes player position if sticks have been pushed
130 ST=STICK(PLRNO)
140 IF ST=14 THEN Y(PLRNO)=Y(PLRNO)-1:GOTO 300
150 IF ST=6 THEN X(PLRNO)=X(PLRNO)+1:Y(PLRNO)=Y(PLRNO)-1:GOTO 300
160 IF ST=7 THEN X(PLRNO)=X(PLRNO)+1:GOTO 300
170 IF ST=5 THEN X(PLRNO)=X(PLRNO)+1:Y(PLRNO)=Y(PLRNO)+1:GOTO 300
180 IF ST=13 THEN Y(PLRNO)=Y(PLRNO)+1:GOTO 300
190 IF ST=9 THEN X(PLRNO)=X(PLRNO)-1:Y(PLRNO)=Y(PLRNO)+1:GOTO 300
200 IF ST=11 THEN X(PLRNO)=X(PLRNO)-1:GOTO 300
210 IF ST=10 THEN X(PLRNO)=X(PLRNO)-1:Y(PLRNO)=Y(PLRNO)-1:GOTO 300
220 NEXT PLRNO:GOTO 100
298 REM **********************************************************************
299 REM This section keeps the player from going off the screen
300 IF X(PLRNO)<0 THEN X(PLRNO)=0:BEGIN(PLRNO)=1
310 IF X(PLRNO)>39 THEN X(PLRNO)=39:BEGIN(PLRNO)=1
320 IF Y(PLRNO)<0 THEN Y(PLRNO)=0:BEGIN(PLRNO)=1
330 IF Y(PLRNO)>23 THEN Y(PLRNO)=23:BEGIN(PLRNO)=1
340 IF BEGIN(PLRNO)=1 THEN BEGIN(PLRNO)=0:GOTO 430:REM This keeps player
from
350 REM self-destructing if against the wall
398 REM **********************************************************************
399 REM Check new postion and move player
400 POSITION X(PLRNO),Y(PLRNO):GET #6,Z:REM Check to see if space is
occupied
410 IF Z=1 OR Z=2 THEN 500:REM If space is occupied, call end routine
420 D(PLRNO)=D(PLRNO)+1:REM Add to score if player moves
430 COLOR PLRNO+1:PLOT X(PLRNO),Y(PLRNO):REM Put player in new postion
448 REM **********************************************************************
449 REM Sound routine
450 FOR WAIT=1 TO 10:SOUND 2,143,6,10:NEXT WAIT:SOUND 2,0,0,0
460 NEXT PLRNO:GOTO 100:REM Start over
498 REM **********************************************************************
499 REM Sound routine
500 SOUND 2,50,8,10:FOR N=1 TO 20:FOR L=1 TO 10:SETCOLOR 2,0,L:SETCOLOR
4,0,L
505 NEXT L:NEXT N:SOUND 2,0,0,0
510 GRAPHICS 2+16:PRINT #6;"SCORE #1","  SCORE #2"
520 PRINT #6;"    ";D(0),"     ";D(1)
530 PRINT #6:PRINT #6
540 POSITION 3,8:PRINT #6;"PRESS start TO        PLAY AGAIN  "
550 GOTO 5
```

BASIC ON/OFF
A HARDWARE MOD
by Randy Agee, WB4BZX

(from Jan-Feb issue of Ad Astra - newsletter of the ATARI MICROCOMPUTER NETWORK, Washington C.H., Ohio)

I've spent about ten months, and what seems like half or my computer time, popping the top door on my '800 to either plug-in or pull-out the BASIC ROM cartridge. For anyone who operates from a disk-based system and loads both BASIC and binary programs, I would imagine the experience is similar. Not only is it a real pain in the POKEY, but the ROM slot begins to loose their grip after a long period and causes contact problems.

Well, there IS a way to fix all of this! How would you like to leave BASIC or reload BASIC with the flip of a switch??? It can be done for less then 2 bucks and 40 minutes of your time. It will require surgery to your machine and will void any remaining warranty. I also caution you to NOT ATTEMPT this modification unless you feel comfortable working with modular printed circuit boards.

To start, remove the pop-top, BASIC and all other ROM and RAM cards for your computer. Either remove or turn to the side the plastic locking tabs for the top. turn the 800 over and remove the 5 Phillips screws from the bottom of the case. Once inside, place a pencil mark beside the three remaining screws holding down the mother board (so you will know which ones to replace before re-assembling the case). Now remove the remaining screws. You may now remove the mother board from the top of the case and the keyboard. Carefully unplug the keyboard and the speaker and set them woth the top case aside. Remove all of the Phillips screws around the perimeter of the metal shield. You may now unplug the mother board and the line poing to the top board. Lift the mother board clear from the computer. You will notice 4 nylon retainers in the metal shield. If you turn the mother board over, you will note that there are pins in these retainers that may be pushed back with a small screwbdriver to remove the shield completely. Onc this is accomplished, the plastic cover may be snapped off from the top of the motherboard by pushing in the tabs underneath.

Now we are ready for the serious part. Looking at the bottom of the board from the controller jacks end you should be able to id4ntify the left cartridge slot (on your right). There are 30 pins on this connector. Starting on the back row and counting from your right, find pin 13. This is the Vcc (+5v) pin. The initial foil for this pin comes out on the top of the board and then comes through the board to the side you are looking at. If you hold the board up to a strong light it is easy to trace this line. CAREFULLY cut through the foil on the bottom side of the Vcc line so as to break the path. I used an electric pencil engraver for this job. Solder a length of small two-conductor cable to each side of the foil and dress to your right, taking care to aviod any sharp component ends, and replace the shield and nylon pins. Snap in the plastic piece on the other side and reassemble the top part of the computer to the case. If you use small wire there is enough space to bring your leads out of the lower-right corner of the metal plate where it meets the aluminum card housing. Set these parts aside for a moment.

Pick up the bottom of the case and set it so that the controller jacks are facing you and it is right-side up. On your left, near the speaker boss, is a small smooth round spot on the lip on the case. This is a perfect spot to drill a 1/4" hole to mount a submini toggle-switch such as a Radio Shack 275-324 ($1.99). This spot puts the switch out of the way and out of sight, but still allows quick and easy access. Solder the wires from the cut in the foil to the switch and put the bottom case on the computer.

If you were sucessful in your venture within the innards of the '800, you may now leave your BASIC cartridge installed and choose between BASIC and binary mode by the flip of a switch. Let's assume for a moment that you have just booted in DOS, without a cartridge in the left slot, and realize you need BASIC. Bad news huh? You would have to re-boot DOS with BASIC installed! With this modification, all you have to do is flip the swith to BASIC and press SYSTEM RESET key to load it in. The inverse is true to leave BASIC. No power-up, power-down or plug in or out is necessary! Your operations are not only easier, but a lot of wear anf tear on your computer is avoided.

Good luck!
73,
Randy T. Agee, WB4BZX

NOTE: SEE PICTURES ON LAST PAGE.

MILATARI * * * AUGUST 1983

MEMBER SURVEY

Our new mmembership committee is compiling a profile listing of our club members. As of this date we have no way of knowing what type of equipment and interests you have. So please take a few minutes to fill this out and return it to the next meeting or mail it to Dennis J. Bogie, S35 W28674 Loon Hollow, Waukesha, WI 53186. To avoid threatening phone calls please have your survey form in by September 17th.

Name: _____

Street: _____

City: _____ State: _____ Zip: _____

Pome phone: _____ Business phone: _____

1) System: 400( ) 800( ) 1200( ) Other( ) _____
2) Tape: Yes( ) No( )
3) Disk drive(s):   Yes( ) No( ) Brand: _____
Single ( ) ot Double density ( ): If you own 2 or more drives list extra information here: _____
_____
4) Memory: 16K( ) 32K( ) 48K( ) Other( ) _____
5) Modem: Yes( ) No( ): If Yes what brand & baud rate
_____
6) Printer: Yes( ) No( ): If yes what brand
_____
7) Check if you have: Joystics( ) Paddles( ) Voice( )
8) Knowledge (N=none B=beginner I=intermediate A=advanced
BASIC( ) BASIC A+( ) Mach Lang( ) Forth( )
Pilot( ) Other lang( ) _____
9) What do you want from your user group?
_____
_____
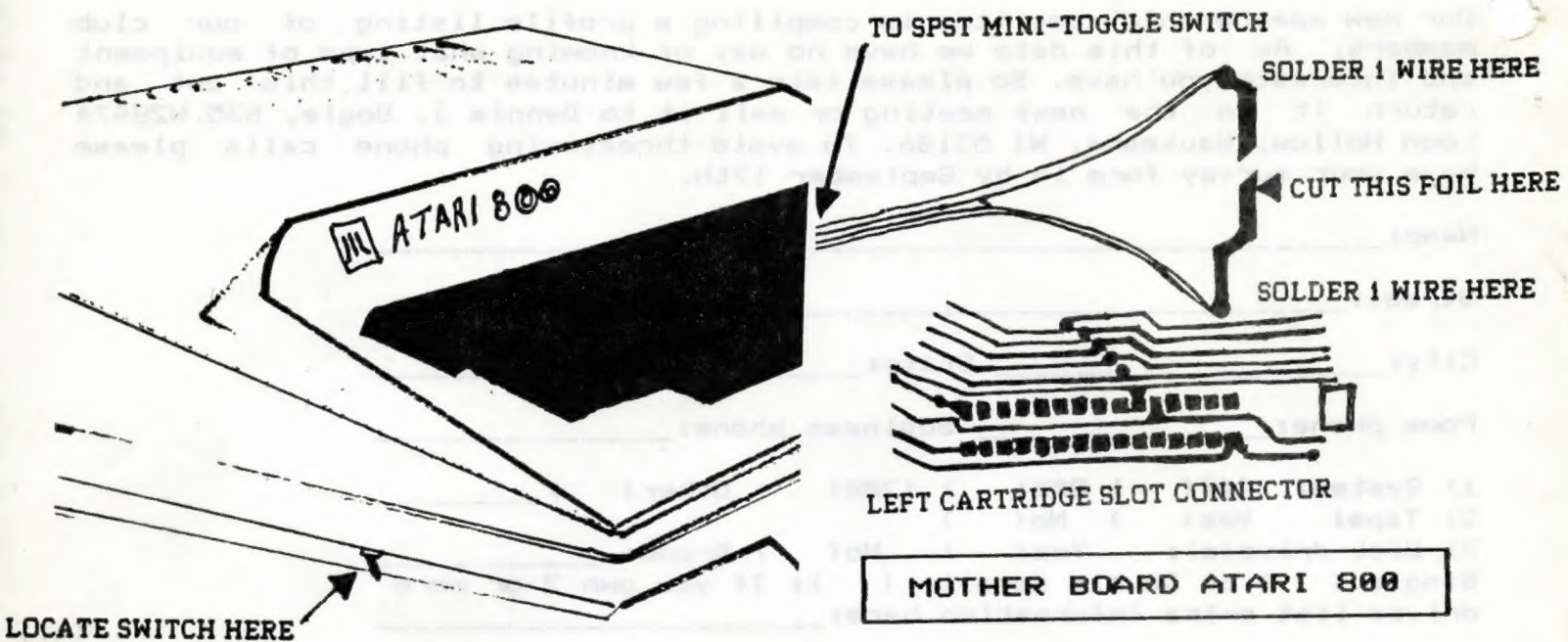10) Do you have any suggestions or ideas for the club?
_____

11) What are your favorite programs?
_____

12) What would you like to see more of in the way of programs?
_____
_____
Thank you for filling out this survey!

Additional remarks:

TO SPST MINI-TOGGLE SWITCH

SOLDER 1 WIRE HERE

CUT THIS FOIL HERE

SOLDER 1 WIRE HERE

ATARI 800

LEFT CARTRIDGE SLOT CONNECTOR

MOTHER BOARD ATARI 800

LOCATE SWITCH HERE

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